

REMARKS

Claims 1-9 and 33-41 stand rejected under 35 U.S.C. § 103(a). Claims 10-13, 16-24, and 42-56 are allowed. Claims 14 and 15 were objected to. Applicant respectfully responds to this Office Action.

Allowed Claims

Claims 13, 16-24 and 42-56 were allowed by the Examiner. Applicants thank the Examiner for allowing claims 10-24 and 42-56.

Claim Objections

Claims 10, 20, and 52 were objected to because of informalities. The Examiner requests that “were” be changed to “was” in the phrase “terminating reception of the frames when said determined number of frames were received correctly” as found in claims 10, 20, and 52. Applicants respectfully submit that this change is grammatically incorrect and should not be made and request that the objection to claims 10, 20, and 52 be withdrawn. In addition, Applicants also note that each of these claims was indicated as allowed by the Examiner.

Claims 14 and 15 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully point out to the Examiner that claim 14 depends from allowed claim 10. Therefore, Applicants have not rewritten claim 14 as it depends from an allowed base claim. Claim 15 is allowable as depending from allowable claim 14.

Claim Rejections 35 U.S.C. § 112

Claims 14 and 15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14 and 15 were rejected as the limitation “wherein said determining number of frames that must be received correctly in accordance with a determined amount of redundancy” lacked antecedent basis. Both claims depend from claim 10. Claim 10 includes the limitation at issue and therefore the limitation in claim 14 has sufficient antecedent basis. Claim 15 depends from claim 14 and is allowable as depending from an allowable claim.

Claim Rejections under 35 U.S.C. § 103

Claims 1, 2, 4-7, 9, 33, 34, 36-39, and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,012,159 to Fisher (hereinafter “Fisher”).

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. “The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants’ disclosure.” In re Vaack, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that a prima facie case of obviousness has not been established regarding claims 1, 2, 4-7, 9, 33, 34, 36-39 because the prior art cited does not teach or suggest all the claim limitations. Specifically, the cited prior art does not disclose or suggest the limitation “determining a number of frames that must be received and decoded correctly by an inner decoder for an outer decoder to correctly decode the received frames” as found in Applicants’ invention.

Fisher discloses a method and system for error-free data transfer. (Title) The method is directed to the transmission of large digital objects over a one-way broadcast satellite system to overcome the effects of burst errors which conventional EDAC methods fail to correct altogether and retransmission fails to correct completely. (Col. 4, lines 28-34) The original packet sequence is transformed into an encoded packet sequence, so that if any combination of encoded packets, equal in number to the number of original packets is successfully received, the original packet sequence can be recovered. By accurately estimating the number of packets expected to become lost because of noise, only the minimum number of encoded packets need be generated and broadcast. (Col. 4, lines 34-41) The file can reconstructed without any errors by using the file

error-correcting decoding method, despite packet loss, as long as the number of encoded packets correctly received is greater than or equal to the number of original packets. (Col. 5, lines 46-50) Encoding is performed using standard EDAC encoding schemes (Col. 7, lines 18-21) after which the codefile is transmitted to subscriber computers using packet-based broadcast protocols. (Col. 5, lines 27-30)

Applicants respectfully submit that Fisher does not teach, disclose or suggest the stated claim limitations. Fisher discloses that bit encoding occurs but does not teach or suggest using an inner decoder in combination with an outer decoder. The Examiner cites col. 7 lines 27-36, 49-52, col. 8, lines 7-18, and col. 9 line 64 to col. 10 line 1, also lines 13-35 as teaching “the subscriber determines that the number Y’ packets correctly received and decoded by EDAC decoding is equal to the number original packets, then the packets received are forwarded to a second decoder in order to recover the original file X”. The cited portions are silent concerning the use of an inner and an outer decoder. The cited portions describe in detail the matrix operations performed during decoding to attempt to recover the original data.

In addition, Applicants submit that Fisher teaches away from Applicants’ amended claim 1. The Examiner states that Fisher teaches that if the number of correctly received packets is equal to the number of original packets, the original file can be reconstructed from the correctly received packets and cites col. 10, lines 13-20. The cited portion describes sending the encoded packets in sequence over a satellite transmission channel. A subscriber computer correctly received some encoded packets, such as numbers 1, 3, 5, 6, 7, 9, and 10 but misses packets 2, 4, and 8. Since the number of correctly received packets equals the number of original packets, the file may be reconstructed. The cited portion continues with a discussion of the vectors of the first byte of each of the correctly received packets and states “Notably, if transmitted packets 1, 2, ...7, corresponding to the original packets, were all correctly received, then there would be no need for decoding.” (Col. 10, lines 31-34). Therefore, Applicants submit that Fisher does not disclose the following limitation: “determining a number of frames that must be received and decoded correctly by an inner decoder for an outer decoder to correctly decode the received frames” and request that the rejection of claim 1 be withdrawn.

Claims 2 and 34 are allowable as depending directly from an allowable base claim.

Claims 4, 7, 36, and 39 are allowable as depending directly or indirectly from an allowable base claim.

Claims 5 and 37 are allowable as depending directly or indirectly from an allowable base claim.

Claims 6 and 38 are allowable as depending directly or indirectly from an allowable base claim.

Claims 9 and 41 are allowable as depending directly or indirectly from and allowable base claim.

Claim 33 is allowable for the same reasons given above for claim 1.

Claims 3, 8, 35, and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fisher in view of U.S. Patent 5,537,410 to Li (hereinafter “Li”).

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. “The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants’ disclosure.” In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that a prima facie case of obviousness has not been established regarding claims 3, 8, 35, and 40 because the prior art cited does not teach or suggest all the claim limitations. Specifically, the cited prior art does not disclose or suggest the limitation “determining a number of frames that must be received and decoded correctly by an inner decoder for an outer decoder to correctly decode the received frames” as found in Applicants’ invention.

The discussion of Fisher, above, also applies to claims 3, 8, 35, and 40. Li teaches a subsequent frame variable data rate indication method. (Title) In the method of Li, a fixed frame boundary system with variable data rates inserts into a current frame an indication of the data rate of the next frame. After the first frame is received and processed at a receiver, the data rates of subsequent frames are known before processing. (Abstract)

Li does not teach or suggest “determining a number of frames that must be received and decoded correctly by an inner decoder for an outer decoder to correctly decode the received frames” as found in amended claim 1. The Examiner cites Li as teaching “informing the receiving end of the data rate (thereby includes the encoding rate and the amount of redundancy)”. Li is silent regarding the encoding rate. Applicants submit that a data rate is independent of the encoding rate. Data rate refers to the rate of transmission of data packets, while encoding rate may have no relation to the eventual transmission rate. Furthermore, the data rate is independent of the rate of redundancy. The data rate of frame transmission is independent of the number of redundant frames that may be required for successful decoding of the transmitted data. Li is also silent regarding the use of an inner decoder and an outer decoder. Therefore, Applicants submit that the combination of Fisher and Li does not teach or suggest “determining a number of frames that must be received and decoded correctly by an inner decoder for an outer decoder to correctly decode the received frames”.

Applicant respectfully submits that claims 3, 8, 35, and 40 are allowable as depending directly or indirectly from an allowable base claim as well as for the reasons given above.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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